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**[12] Utility Model Patent Description**

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[73] Patentee: Xiamen King Long United Automotive Industry Co., Ltd.

Address: Lianyue Road, Xiamen, Fujian Province (361012)

[72] Creator: Jiang Aiping, Li Xianbo

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Agent: Li Ning

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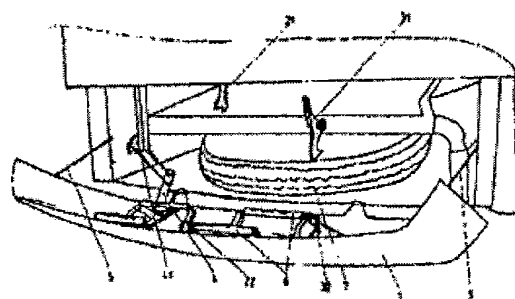
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[54] Utility Model Name: A Vehicle Front Bumper

**[57] Abstract**

This utility model has disclosed a vehicle front bumper. It is locked to the front wall frame of the vehicle through the fastening lock and the safety hook, and is connected to and is tilted to and from the vehicle body through the crank slider arrangement, and the position limit draw cord is set and connected between each of its two sides and the vehicle body, and its inside has a set of guide rollers. Because of this, it is convenient to adjust and repair the various lamps installed on the utility model, and it is labor saving and easy to put the spare tire under the frame.



## Claims

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1. This is a vehicle front bumper, on which a types of lamps are installed, and it has the following features: it is locked to the front wall frame of the vehicle through the fastening lock and the safety hook; it is connected to and is tilted to and from the vehicle body through the crank slider arrangement, while the position limit draw cord is set and connected between each of its two sides and the vehicle body; its inside has a set of guide rollers.

2. With regard to the vehicle front bumper as mentioned in Claim 1, it has the following features: the fastening lock is composed of the latching tongue controlled by the vehicle body and a latch fixed to the front bumper.

3. With regard to the vehicle front bumper as mentioned in Claim 1, it has the following features: the safety hook is composed of the locking hook set beneath the vehicle body and the shackle set on the front bumper.

4. With regard to the vehicle front bumper as mentioned in Claim 1, it has the following features: the slide block in the crank slide arrangement is a gas spring.

5. With regard to the vehicle front bumper as mentioned in Claim 1, it has the following features: the set of guide rollers set inside the vehicle front bumper are four.

### A Vehicle Front Bumper

The utility model involves a vehicle front bumper, and is especially related to its tilting mechanism, locking structure and spare tire loading rollers.

The front bump for an ordinary vehicle is in a fixed style, which means that it is installed and fixed to the front wall frame, and the front turn signal lights, the headlamps and the front fog lamps are installed at the front bumper, and therefore, when various lamps are adjusted and repaired, repair workers can only lie on the floor to operate, and it is hard work, while other vehicles have the spare tire placed beneath the frame behind the front bumper, and this has made it very difficult to load the spare tire.

The purpose of the utility model is to provide a vehicle front bumper, and enable it to tilt, so that it is convenient to adjust and repair the various lamps fixed on it, and it is easy to load the spare tire.

In order to make the above-mentioned purpose come true, the utility model is locked to the front wall frame of the vehicle through the fastening lock and the safety hook, the fastening lock is composed of the latching tongue controlled inside the vehicle body and the latch fixed to the front bumper, the safety hook is composed of the locking hook set beneath the front of vehicle body and the shackle set on the front bumper, the two locks are used in combination, to make sure that the front bumper is firmly locked to the vehicle front wall frame; the vehicle front bumper is connected to and is tilted to and from the vehicle body through the crank slider arrangement, and the slide block is implemented through the gas spring; the position limit draw cord is also set and connected between each of the two sides of the vehicle front bumper and the vehicle body, so as to limit the tilting position of the front bumper; in addition, the front bumper is also set up with a set of rollers, so that the spare tire can be conveniently placed beneath the frame behind the front bumper through the rolling of rollers.

After the above-mentioned structure is adopted, because the front bumper can tilt and various types of lamps are still installed on the front bumper, it is therefore no longer necessary to lie on the ground beneath the vehicle body for lamp adjustment and repair, which makes the work convenient; and due to the roller setup, the upward and downward lifting force in loading spare tire is converted to the pushing force in overcoming the friction when rolling on the rollers, so that the loading is labor saving and easy.

The utility model is further described in details below in combination with attached drawings and case of implementation.

Figure 1 is the three-dimensional diagram for the utility model;

Figure 2 is the normal state diagram for the utility model.

With reference to Figures 1-2, the vehicle front bumper 1 is locked to the front wall frame of the vehicle through the fastening lock 2 and the safety hook 3, the fastening lock is composed of the latching tongue 21 controlled inside the vehicle body and the latch 22 fixed to the front bumper 1, and its opening is controlled through the control key inside the vehicle cab; the safety hook 3 is composed of the locking hook 31 set beneath the front of vehicle body and the shackle 32 set on the front bumper 1, and because a gap appears between the front bumper 1 and the vehicle front wall frame after the fastening lock 2 is opened, a screw driver is used to touch through the gap the locking hook 31 and make it turn and get detached from the shackle 32 to attain the purpose of opening, and the safety hook 3 is used to avoid the situation in which the front bumper 1 is opened and tilted due to wrong operation in the cab while the vehicle is moving. The vehicle front bumper 1 is connected to and is tilted to and from the vehicle body through the crank slider arrangement 4, and the slide block 41 is gas spring. The position limit draw cord 5 is also set and connected between each of the two sides of the vehicle front bumper 1 and the vehicle body, which can limit the tilting position of the front bumper 1. The front bumper 1 is also additionally set up with a set of rollers 6, so that the spare tire 7 can be conveniently placed beneath the frame.

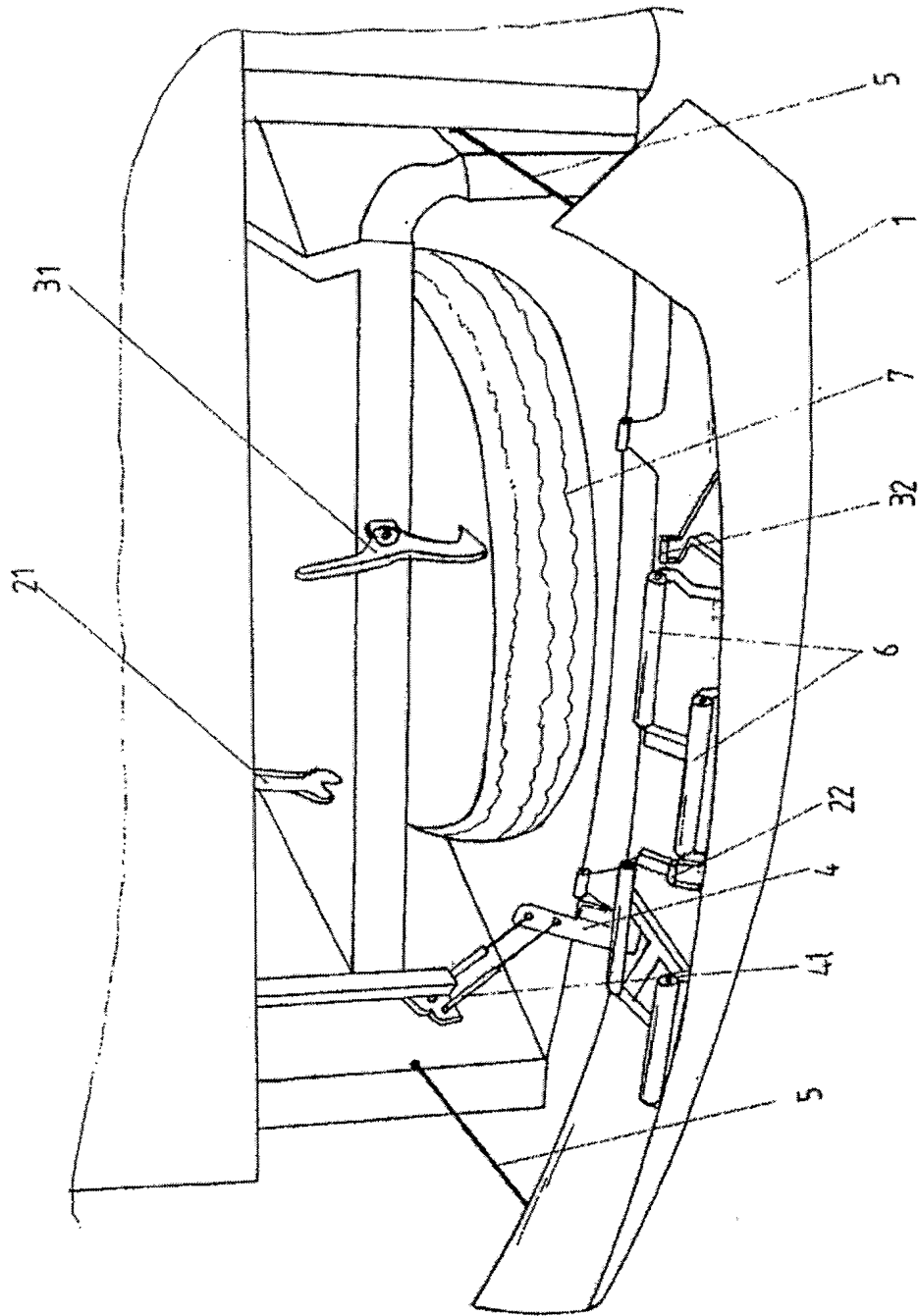


Figure 1



[19]中华人民共和国专利局

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## [12] 实用新型专利说明书

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[22]申请日 97.1.20 [24]颁证日 98.6.27  
 [73]专利权人 厦门金龙联合汽车工业有限公司  
 地址 361012福建省厦门市莲岳路  
 [72]设计人 江爱萍 李贤波

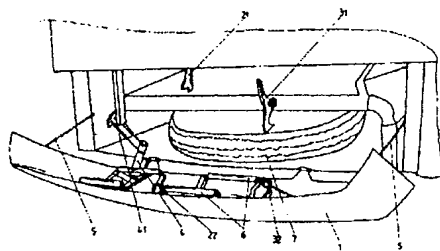
[21]申请号 97204504.X  
 [74]专利代理机构 厦门市新华专利代理事务所  
 代理人 李 宁

权利要求书 1 页 说明书 2 页 附图页数 2 页

[54]实用新型名称 一种汽车前保险杠

[57]摘要

本实用新型公开一种汽车前保险杠。它由固定锁与保险钩锁定在汽车前围骨架上,并由曲柄滑块机构与汽车车体连接翻转,它的两侧与汽车车体之间连接设有限位拉绳,它的内部设有一套导轮。由此,安装在本实用新型上的各种灯具调整维修方便,备用轮胎欲装放在车架下方时省力、容易。



## 权 利 要 求 书

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1、一种汽车前保险杠，各种灯具安装在其上，其特征在于：它由固定锁和保险钩锁定在汽车前围骨架上；它与车体之间由曲柄滑块机构连接翻转，而它的两侧与汽车车体之间连接设有限位拉绳；它的内部设置一套导轮。

2、如权利要求 1 所述的一种汽车前保险杠，其特征在于：固定锁由车体控制的锁舌与一固定在前保险杠上的锁扣配合组成。

3、如权利要求 1 所述的一种汽车前保险杠，其特征在于：保险钩由车体下方设置的锁钩与设置在前保险杠上的钩环配合组成。

4、如权利要求 1 所述的一种汽车前保险杠，其特征在于：曲柄滑块机构中的滑块部分为气弹簧。

5、如权利要求 1 所述的一种汽车前保险杠，其特征在于：汽车前保险杠内部设置的一套导轮为四个。



## 说 明 书

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### 一种汽车前保险杠

本实用新型涉及一种汽车前保险杠，尤其与它的翻转机构、锁固结构及备胎装放导轮有关。

一般汽车的前保险杠为固定式，即固定安装在汽车前围骨架上，而前转向灯、前照灯及前防雾灯安装在前保险杠上，故各种灯具调整维修时，只能由维修工人躺在地板上进行作业，工作十分辛苦，另有的汽车将备用轮胎装在前保险杠后方的车架下面，这使备胎的装放也非常困难。

本实用新型目的在于提供一种汽车前保险杠，使其可以翻转，且固定在其上的各灯具调整维修方便，备胎装放容易。

为达成上述目的，本实用新型由固定锁与保险钩锁定在汽车前骨架上，固定锁由车体内部控制的锁舌与固定在前保险杠上的锁扣配合组成，保险钩由车体前下方设置的锁钩与装置在前保险杠上的钩环配合组成，两个锁配合使用，确保前保险杠稳固地锁定在汽车前围骨架上；汽车前保险杠与汽车车体之间通过曲柄滑块机构连接翻转，滑块部分由气弹簧来实现；汽车前保险杠两侧与汽车车体间还连接设有限位拉绳，以限制前保险杠翻转位置；另外，前保险杠上还设置一套导轮，使备用轮胎可通过导轮滚动，方便地装放在前保险杠后部的车架下面。

采用上述结构后，由于前保险杠可以翻转，各种灯具仍然安装在前保险杠上，故灯具调整维修工作不必再躺在车底地面上进行，工作方便；且因导轮的设置，使备胎装放时的上下抬举用力转为在导轮上滚动时克服摩擦力所用的推力，装放省力、容易。

以下结合附图及实施例对本实用新型做进一步详述。

图 1 是本实用新型立体示意图；

图 2 是本实用新型通常状态图。

参阅图 1—2，汽车前保险杠 1 由固定锁 2 与保险钩 3 锁定在汽车前围骨架上，固定锁由车体内部控制的锁舌 2 1 与固定在前保险杠 1 上的锁扣 2 2 配套组成，并由汽车驾驶室内控制键控制开启；保险钩 3 由车体前方设置的锁钩 3 1 与设置在前保险杠 1 上的钩环 3 2 配套而成，由于固定锁 2 开启后，前保险杠 1 与汽车前围骨架间出现一间隙，通过间隙用螺丝刀触及锁钩 3 1 转动，并与钩环 3 2 脱离，达到开启目的，保险钩 3 用以避免在行车时，驾驶室发生误操作而使前保险杠 1 发生开启翻转。汽车前保险杠 1 与汽车车体之间由曲柄滑块机构 4 连接翻转，滑块部分 4 1 为气弹簧。汽车前保险杠 1 两侧与汽车车体间还连接设有限位拉绳 5，可限制前保险杠 1 翻转位置。前保险杠 1 上另设置一套导轮 6，便于备用轮胎 7 装放在车架下方。

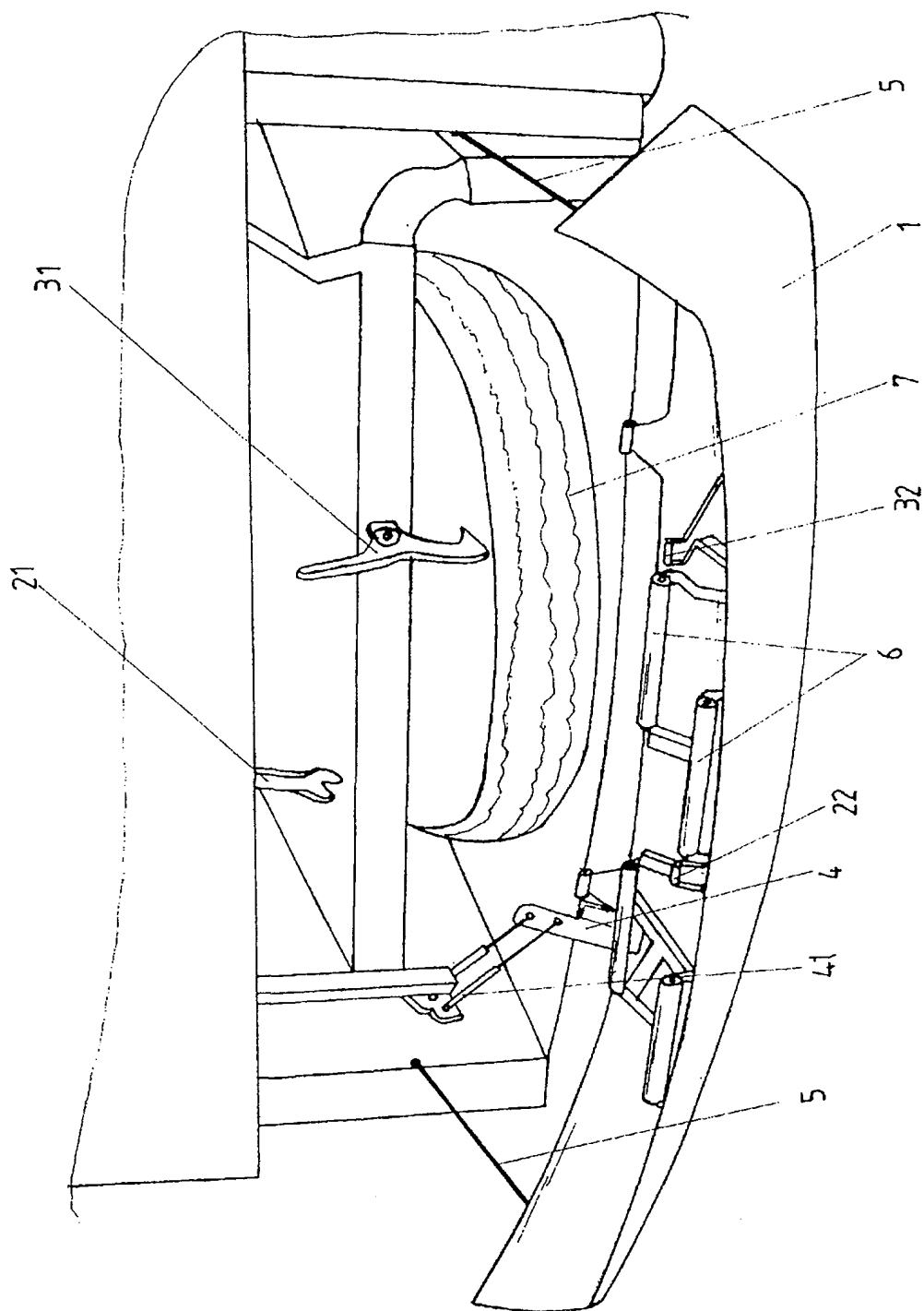


图 1

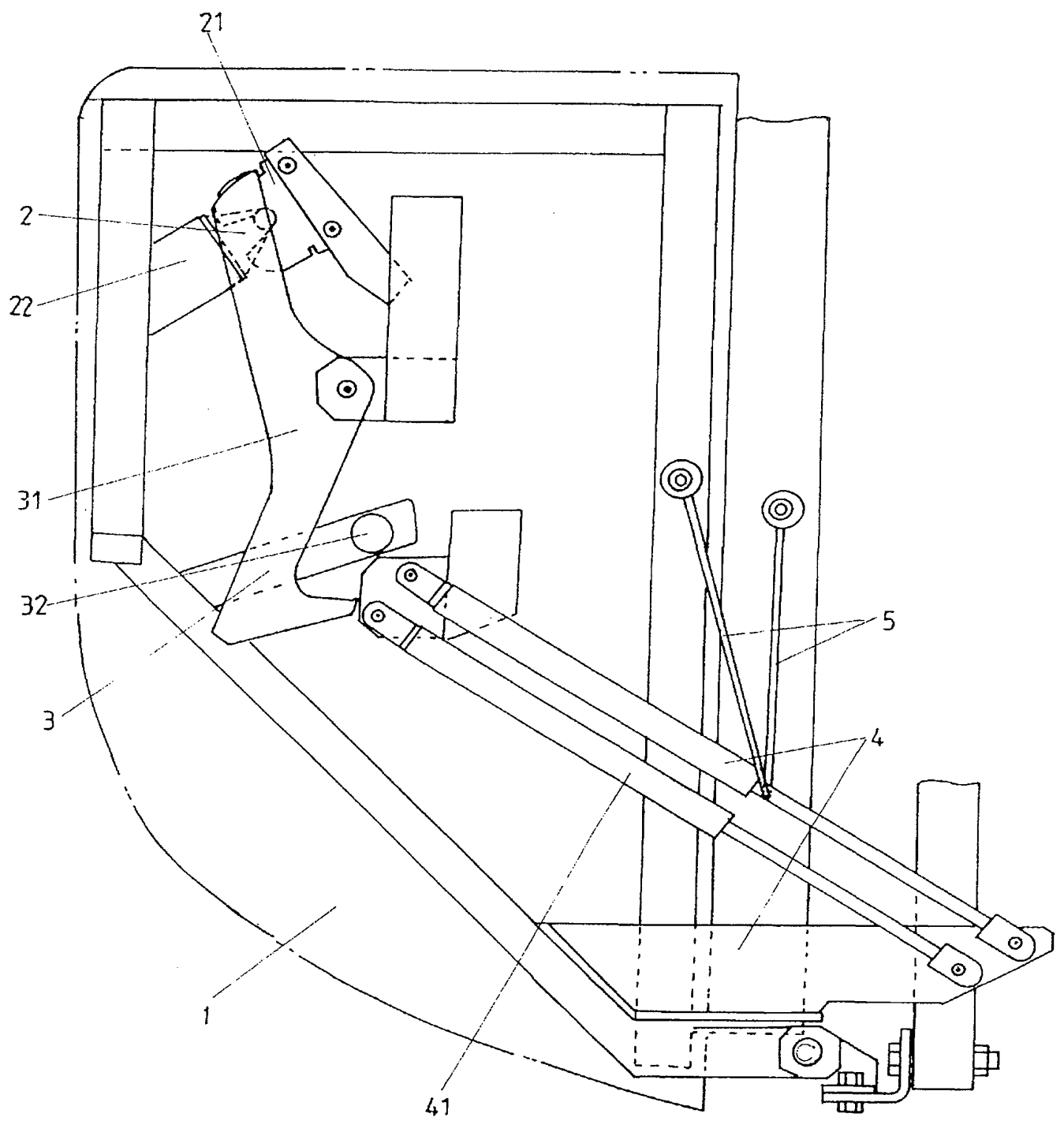


图 2